

### What Are the Best Strategies for Faculty Development in Medical Schools?

### طرق العمل المناسبة من أجل تطوير قدرات أعضاء الهيئة التدريسية في كليات الطب

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**Background:** The aim of current study was to identify the most suitable strategies for faculty development and improving educational potential of faculty members in medical sciences.

**Methods:** The study was cross-sectional. First, using the literature and with the help of experts, a list of all suitable strategies for faculty development was extracted. Then the questionnaire was created based on that list and after determination of its reliability and validity using retest method (correlation coefficient=0.87) was distributed among 96 faculty members of the faculty of Medicine in the target university whom were selected using random sampling method. The results were then analyzed using descriptive and analytical methods.

**Results:** The strategies of workshops, observation the excellence performance, short courses and fellowships had the maximum average scores (2.59, 2.51, 2.42 and 2.33), and monitoring the performance of the faculty with the average score of 1.67 was determined to be the lowest average. The results showed that workshop solutions, short-term training courses and Fellowship are related to the faculty members' age groups. (P-Value<0.05).

**Conclusion:** The results showed that most suitable strategies for improving the educational performance of faculty members included workshops, short-term training courses, fellowships and observation on the best performance.

**Keywords:** Development, Education, Faculty members, Strategies

**الأرضية والهدف:** الهدف من هذه الدراسة معرفة أنسب الطرق والحلول من أجل تطوير وتقوية قدرات ومراتب أعضاء الهيئة التدريسية في الكليات الطبية. **الطريقة:** أجريت هذه الدراسة بطريقة مقطعية. في البداية بعد تقييم المستندات والنصوص وبعدها أخذ رأي أصحاب النظر وتم وضع فئوس مناسب من أجل تطوير قدرات أعضاء الهيئة التدريسية. وبعدها وحسب الفئوس و ورقة الأسئلة الإستفسارية و بعد تعيين المحتوى بالإستفادة من طريقة إعادة الإختبار و معامل الإرتباط تم التوزيع بين 96 عضو من أعضاء الهيئة التدريسية الذين تم إختيارهم. تم تحليل وتجزئة البيانات بالإستفادة من الطريقة التحليلية والتوصيفية.

**الواصل:** أعلى معدل للمعلومات كان للإستراتيجيات الورشات و مشاهدة أفضل الطرق و الدورات القصيرة والإيفاد الدراسي وهازت على اعلى المعدلات (٢.٥٩، ٢.٥١، ٢.٤٢ و ٢.٣٣) وهامز موضوع الرقابة على عمل الاساتذة معدل ١.٦٧ أي أدنى علامة. أثبتت النتائج أن طرق عمل الورشات والدورات التعليمية القصيرة والدورات فوه تخصصية لها علاقة بالسطح السنوي لأعضاء الهيئة التدريسية (p-value<٠/٥).

**النتيجة:** أثبتت النتائج أن أفضل طرق العمل لتحسين مستوى أعضاء الهيئة التدريسية هي الورشات والدورات التعليمية القصيرة والدورات فوه التخصصية ومشاهدة أفضل الطرق والوظائف.

**الكلمات الدلالية:** أعضاء الهيئة التدريسية، التعليم، تمكين، طريقة عمل

### راهكارهای مناسب برای توانمندسازی اعضا هیئت علمی در دانشکده های پزشکی

### میثیکل فیکلنیز کی اکیڈمیک کونسل کے اراکین کو علمی لحاظ سے تقویت کرنا

**زمینه و هدف:** هدف پژوهش حاضر، شناسایی مناسبترین راهکارهای توانمندسازی و ارتقا توانمندی آموزشی اعضای هیئت علمی در دانشکده های علوم پزشکی بود. **روش:** این مطالعه به روش مقطعی انجام شد. ابتدا با بررسی مستندات و متون و سپس نظر صاحب نظران، فهرست راهکارهای مناسب توانمندسازی استادان استخراج شد، سپس براساس فهرست، پرسشنامه آماده و پس از تعیین روایی محتوا و پایایی با استفاده از روش بازآمایی (با ضریب همبستگی ٠/٨٧) در بین ٩٦ نفر از اعضای هیات علمی دانشکده پزشکی که با روش نمونه گیری تصادفی انتخاب شدند، توزیع شد. سپس داده ها با استفاده از روش های توصیفی و تحلیلی تجزیه و تحلیل شدند.

**یافته ها:** استراتژی های کارگاه ها، مشاهده بهترین عملکرد، دوره های کوتاه مدت و بورس تحصیلی، دارای بالاترین میانگین نمرات (٢.٥٩، ٢.٥١، ٢.٤٢ و ٢.٣٣) و نظارت بر عملکرد اساتید با میانگین نمره ١.٦٧ دارای پایین ترین میانگین نمره بود. نتایج نشان می دهد که راهکارهای کارگاه، دوره های کوتاه مدت آموزشی و فلوشیپ با گروه های سنی اعضای هیات علمی ارتباط دارند (p<٠/٥).

**نتیجه گیری:** نتایج نشان داد که مناسبترین راهکارها برای بهبود عملکرد آموزشی اعضای هیات علمی شامل کارگاهها، دوره های کوتاه مدت آموزشی، فلوشیپ و مشاهده بهترین عملکرد است.

**واژه های کلیدی:** اعضای هیات علمی، آموزش، توانمندسازی، راهکارها

**بیگ گراؤنڈ:** اس تحقیق کا هدف میثیکل سائنسس میں اکیڈمیک کونسلوں کے اراکین کو علمی لحاظ سے تقویت پہنچانے کی راہوں کو تلاش کرنا ہے۔

**روش:** اس تحقیق میں سب سے پہلے مستندات اور متون نیز ماہرین کے نظریات لئے گئے، ان میں اساتذہ کو علمی لحاظ سے تقویت پہنچانے کی راہوں کا انتخاب کیا گیا، اس تحقیق میں نوے اساتذہ نے شرکت کی، انہیں ایک سوالنامہ پیش کیا گیا جس میں ری ٹسٹ کی روش اپنائی گئی تھی۔ ڈیٹا کا تجزیہ توصیفی اور تحلیلی روشوں سے کیا گیا۔

**نتیجے:** ورک شاپس کی اسٹرائیجی، بہترین کارکردگی کا مشاہدہ، کریش کورس اور اسکالر شپس جیسے امور اساتذہ کو علمی لحاظ سے تقویت پہنچانے میں موثر ثابت رہے ہیں۔

**سفارش:** چونکہ مندرجہ بالا امور اساتذہ کی علمی صلاحیتوں میں نکھار لانے میں موثر ہیں لہذا ان پر عمل کیا جانا چاہیے۔

**کلیدی الفاظ:** اکیڈمیک کونسل، تعلیم، تقویہ پہنچانا، علمی

## INTRODUCTION

Faculty members are the central component and the linchpin of universities and scientific institutions and are one of the most important parts of the educational system of every country due to the direct effect of their abilities on the quality of higher education (1). Faculty Development is best defined as delegation of power and authority, increasing participation, developing a sense of responsibility and motivation (2). Some consider faculty development in educational situations to be the creation of opportunities for educators for independence, choice, responsibility and participation in decision making. Faculty Development and its factors and strategies especially in education institutions has gained increased attention from experts, researchers and authorities of institutions of higher education (3). Strategies for faculty development include 1) faculty development activities in order to increase the effect of faculty members on all educational levels (bachelor, masters and continuing education) and programs for medical care experts in various situations; 2) A wide range of activities designed to help the faculty members assume various roles; 3) A pre-planned program for preparation of faculty members and institutions for their scientific role and improvement of personal knowledge and skills of members for various educational, research and management situations (4).

The goal of faculty development is to improve their skills based on their organizational position in order to ensure vitality and dynamism of their activities in present and future (5). On the other hand, given the fact that the situation of each university and institution is unique there is no fixed model for faculty development (6) and these programs differ from one university to the other and often contain official and unofficial programs (7). Official programs include workshops, seminars, short-term training programs, fellowships, personal counseling and alternative formats and unofficial programs include peer learning, non-formal education, electronic learning and self-directed learning (5). One needs to consider the situation of each institution and the needs of the faculty members which are influenced by the institution and their role in it while designing and implementing faculty development programs. Hence, states that faculty development often requires coordination between organizational and personal goals (8) and according to Bland et.al faculty development programs and activities are designed in order to improve the commitment and responsibility of faculty members toward their role in the organization and increase their efforts for reaching personal and organizational goals (9).

Effective faculty development programs have two main characteristics: first they have a comprehensive overview of all the factors affecting the success of faculty members and they also pay special attention to the organization of all activities needed for faculty development (8).

A study conducted by Steinert et.al emphasizes that effective and suitable faculty development strategies need to take into account personal and organizational needs and also connect organizational and personal development (10). There are also other factors that are important for creating an effective

faculty development strategy which include a clear and explicit definition of organizational goals, systematic design of strategies and activities in order to reach organizational goals and active participation of the faculty members in the programs (8, 11). Three other factors that affect the effectiveness of faculty development include participation of the faculty members in design and implementation of the program, evaluation of faculty member as the first step of the program and creating changes in all of the educational environment and not just the participants (12).

At universities, the quality of educational and research activities is greatly dependent on the dynamism of the faculty (13). Baral believes that effective teaching is the goal of all faculty members and therefore it will be emphasized in their training and educational programs of the institution are based on this concept. In this regard, concepts such as learning – teaching, codification of course objectives, organization of educational resources, different teaching – learning methods and evaluation methods are important (14). In the meantime educators and clinical faculty members have the important and challenging responsibility of transferring the art and science of medicine to their pupils (15) and preparing health and medicine experts for teaching is one of the most important factors for increasing the effectiveness of medical courses and programs (16).

Medical science universities need to plan in such a way that enables their faculty members to expand their skills beyond their specialized area and empowers them to provide their students with the highest possible quality of education. Therefore, faculty development in teaching, scholarship and leadership helps to achieve the goals of institutions of higher education (17).

Design and implementation of faculty development programs and methods as means for improving the skills and abilities of faculty members (such as teaching skills, research abilities and clinical skills) is the basis of improving the performance of faculty members in institutions of higher education (18). Association of American Medical Colleges (AAMC) considers obtaining educational abilities to be part of the validation process (19). In Iran, for the first time in Middle East educational workshops were held by Medical Education department of Shiraz University in year 1973 in order to train educators in all of eastern Mediterranean region (16) and in recent years faculty development programs have gained increased attention (20).

There are few studies dedicated to identification of methods for faculty development in education. Current statistics show that unlike in industrial and business sectors in Iranian Medical science universities and institutions the factors for development of human resources are rarely investigated and it is not possible extent the studies in industry and business to medical education (21). Therefore strategies for faculty development of medical science faculty members are among unknown and challenging subjects. This increases the urgency of determining the best methods and strategies. For example workshops and training seminars are among the most common improvement programs for the faculty members(5); however, the question is that: are these programs suitable for answering the needs of all faculty

members with different academic positions and backgrounds? The above mentioned factors show the necessity of studying methods other than common practices in education in order to meet the needs of all faculty members and provide a suitable solution for the present problems. Given the fact that updated faculty is a vital part of answering the educational needs of every university (3) and regulations of Iranian plan for improving knowledge and faculty development (22) and due to the importance of development of universities and the potential benefits of these programs, this study aims to present suitable strategies for educational faculty development from their point of view.

## METHODS

This descriptive – analytical study that was carried out using cross-sectional format and investigated educational strategies for faculty development in department of medicine of Mashhad University of Medical Sciences (MUMS) in year 2012. Also, the relation between personal characteristics of the faculty members and the appropriate of faculty development strategies was investigated. The study population consisted of faculty members of the department of medicine. The study sample was selected using stratified random sampling method among those with natural science and clinical specializations. This study consists of two stages including qualitative (tool preparation) and quantitative stages.

The first question: what are the best strategies for faculty development? Was answered using literature review and focus group discussions. To this end, 21 of the experts, managers, authorities and specialists in faculty development, educational managers and medical education experts with enough experience about the subject of the study were invited to two focus group sessions. The first session consisted of 5 authorities on faculty development in university of medical science and 4 medical education experts while the second session included the manager of center of medical research and education of MUMS, 5 experts on faculty development and from faculty development office and 4 medical education experts. Those among the invited guests who were unable to participate in the focus groups were interviewed separately. The proceedings of the focus groups and interviews were recorded and transcribed and later reviewed and categorized. Both the focus group discussions and interviews were continued until new strategies were suggested. After the focus groups, the results were categorized and all proposed strategies were determined. Then the list of all strategies was presented to the participants for confirmation. In this list each participant was asked to select the most suitable strategy and after reviewing all the opinions, the strategies for educational faculty development in MUMS were determined. Afterwards, these results were used to create a questionnaire using rated scale. At the beginning of the questionnaire, the participating faculty members were asked about personal information such as department (natural science or clinical sciences), type of employment, academic rank, work experience, age, gender and the last academic degree. In the second part of the questionnaire a list of 18 faculty development strategies

obtained from focus groups was presented with each strategy having three possible rankings of suitable, somewhat suitable and unsuitable and the participating faculty members were asked to rank each strategy.

Validity of the questionnaire was confirmed by 10 experts in faculty development. Retest method was used to determine the reliability of the questionnaire. The correlation between these two data sets was determined to be 0.87 which confirms the reliability of the questionnaire. The questionnaires were distributed among the study sample after confirmation regarding the validity and reliability. To this end, first the university's deputy of research contacted the heads of departments in Faculty of medicine and introduced the researcher and research goals. Then researcher distributed the questionnaires among all faculty members of the faculty of medicine which include 475 total members as of year 2012 (89 natural science and 386 clinical medicine faculty members).

To determine the sample size, the accuracy of the study was 10% and the test power was 90%,  $p = 0.05$ . The sample size was determined to be 80 but due to the possibility of loss in sampling, 96 faculty members from both natural sciences and clinical medicines. Afterwards, the questionnaires were collected and the information was coded and then analyzed using SPSS16 software. In order to determine the most suitable strategy, scores of 3, 2 and 1 were given to the options of suitable, somewhat suitable and unsuitable respectively. Then the average score of each strategy was calculated and the four strategies with the highest averages were selected as the most suitable. The descriptive and analytical statistics were used for data analysis. In order to compare the average scores of faculty development strategies based on the personal characteristics of the faculty members, Mann-Whitney test was used for dual-mode qualitative parameters. Chi-square test was also used in order to compare the ratios of two groups. All statistical tests were carried out in the significance level of  $\alpha < 0.05$ .

## RESULTS

87 of the 96 distributed questionnaires among faculty members of Mashhad University of Medical Science were returned (return rate of 90.6%). Among 87 investigated faculty members 17 (19.5%) specialized in natural sciences and 70 (80.5%) in clinical medicine; 51 (58.6%) were assistant professors, 35 (40.2%) had PhD, 29 of them (33.3%) were female and the rest were male. Also 37 of the participants (42.5%) had full time employment and 56 (64.4%) had more than 5 years of work experience. The highest frequency among age groups belonged to ages between 29 and 39 years old (32 participants, 36.8%). Based on these results and Chi-square test there was a significant different in academic rank ( $P = 0.0001$ ) and last academic degree ( $P = 0.0001$ ) of natural science and clinical medicine faculty members. Also according to Chi-square test there was no significant difference between gender ( $P = 0.12$ ), age ( $P = 0.62$ ), employment type ( $P = 0.31$ ) and work experience ( $P = 0.27$ ) of natural science and clinical medicine faculty members.

Figure 1 shows that workshops with an average score of

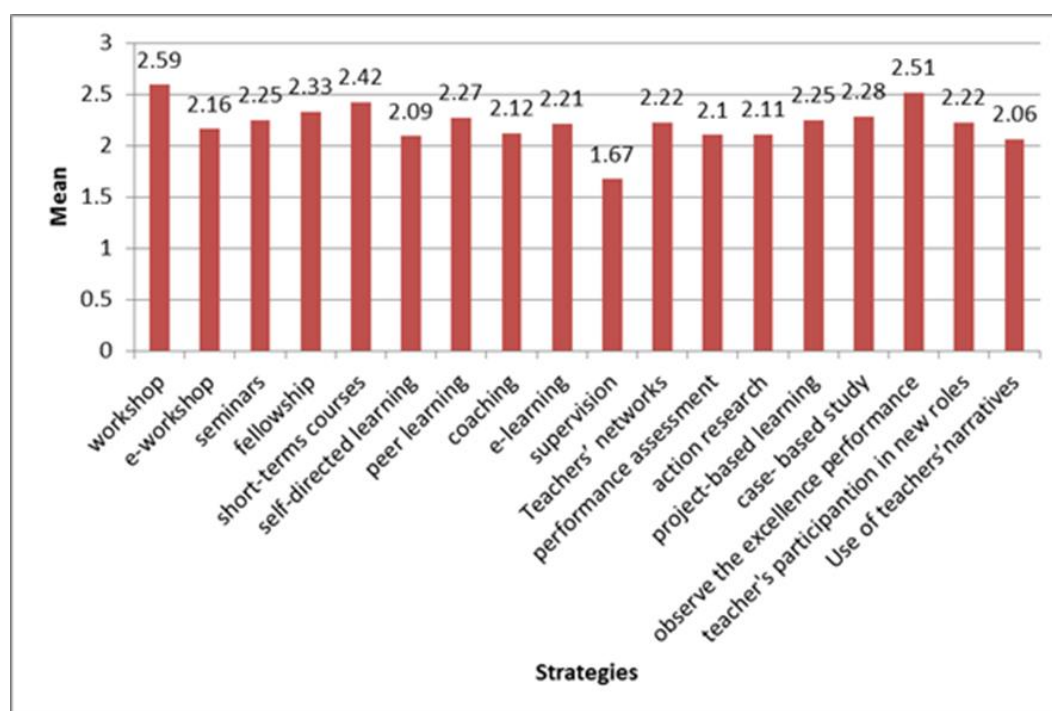


Figure 1. The mean of the scores for strategies in faculty development in medical sciences

$2.59 \pm 0.058$ , determination of the best performance with the average score of  $2.51 \pm 0.056$ , short-term training courses with the average score of  $2.42 \pm 0.69$  and fellowships with the average score of  $2.33 \pm 0.8$  had the highest and monitoring the performance of the faculty with the average score of  $1.67 \pm 0.75$  had the lowest score among the strategies.

In order to determine the best faculty development strategy from the faculty's point of view based on their personal characteristics, Mann-Whitney test was used to compare the average scores of strategies selected by natural sciences and clinical medicine faculty members, faculty members with less and more than 5 years of work experience, female and male faculty members and to compare the average scores for different academic ranks, educational degrees, employment type and age groups.

The results show that there is a meaningful relation between the average scores for workshops, short-term training courses and fellowships with the age of the faculty members ( $P < 0.05$ ) and older faculty members consider these strategies to be more suitable. There is no significant relation between the strategy of determination of the best performance and participant's age ( $P\text{-Value} > 0.05$ ) and there is also no significant relation between other faculty development strategies and personal characteristics of the faculty members ( $P > 0.05$ ) (table1).

## DISCUSSION

The goal of the current study was to determine the best strategies for educational faculty development. The results showed that workshops, determination of the best performance, short term training courses and fellowships are

the most effective and monitoring the performance of the faculty is the least effective strategy from the faculty members' point of view. Among the presented strategies workshops had the highest average. World Health Organization (WHO) also suggests that medical science educators need to be familiar with the basis of science in order to improve their teaching abilities and that holding workshops is probably the best strategy for improving teaching abilities of medical staff (17).

In a study conducted at Kermanshah University of Medical Sciences and in order to determine the viewpoint of faculty members about Educational indicators, about one third of faculty members considered teaching methodology workshops to be unsuitable for their needs but agreed with holding workshops before starting to work, during teaching and in an ongoing manner (23).

A workshop has a significant effect in changing the attitude toward accepting the basics of education planning and student-oriented methods (24). Therefore, workshops are not only used for presenting new information but can also be designed and implemented in such a way that encourages a positive attitude about medical education (25).

The results showed that determination of the best performance (optimal role models) has the highest average after workshops. Many studies emphasize the importance of the role models and determination of the best performance and while this method is useful for creating desirable attitudes and skills in the students, it can be equally useful for faculty development. Faculty members can actively search for suitable role models and learn from them and authorities need to maximize these learning opportunities (26).

In a study by Abdollahi which investigated the factors



**Table 1. The best strategies for faculty development in view of medical faculties according to age categories of samples**

Strategy	Categories of age	Percent (of faculties)	Number (of faculties)	Chi-Square	p-value
Workshop	29-39	65%	21	13.06	0.01
	40-50	40.7%	11		
	51-60	78.9%	15		
	61-71	6/5%	8		
Short term courses	29-39	41.9%	13	8.90	0.01
	40-50	51.9%	14		
	51-60	77.8%	18		
	61-71	66.7%	9		
Fellowship	29-39	62.5%	20	15.98	0.01
	40-50	29.6%	8		
	51-60	55.6%	10		
	61-71	88.9%	8		
Observation the best performance	29-39	56.3%	18	5.78	0.39
	40-50	63%	17		
	51-60	42.1%	8		
	61-71	44.4%	4		
				df=6	

affecting psychological empowering of faculty members according to the faculty members of Tarbiat Moalem University, divided these factors to four categories of participatory management, performance based rewards, job enrichment and benchmarking of desirable performances and showed that there is no relation between benchmarking of desirable performances and faculty development (13). Benchmarking is a multidimensional concept whose ethical and educational dimensions include observational learning, learning in training and feedbacks which can be useful in understanding benchmarking and strategies for determination of suitable role models (27).

According to the results workshops, short-term training courses, fellowships and determination of the best performance have the highest averages. The goal of short-term training courses is strengthening of previous skills and teaching of new abilities and at least half of the course time must be spent on practical aspects (28).

Hatami in a showed that in-service training can improve work knowledge, create changes in behaviors and attitudes, improve precision in work and the quality of education provided by faculty members (29).

Steinert's review article showed that the participants in short-term training courses are satisfied with the results and recommend these courses to their peers. (30). In Hakimi's study also the results show that short-term courses were unsuitable according to the faculty members and employees and that these courses failed to create a desirable improvement in knowledge and information (31).

Fellowship courses are conducted in part-time and full-time forms. Although these courses mostly cover teaching skills, other roles of the faculty such as research, management activities and clinical activities of the faculty members are also covered in these courses. In part-time fellowship courses, faculty members spend less time (few weeks - few months every year) for official training in an institution and then undertake the necessary projects in their own

institution. These courses cover both practical and theoretical skills (32). The results of the study by Cirel (2006) shows that all participants in fellowship courses acknowledge that fellowships had positive effects on their abilities for public speeches, use of multimedia equipments and use of new teaching strategies and also improved their ability in creating multiply choice questions and their understanding regarding various evaluation and feedback methods. This study also shows that fellowships are a suitable method for faculty improvement which is in line with the results of the current study (33).

Performance monitoring is one of the ways for improving the employees in an organization and one of the organization's most important processes. Monitoring is one of the main management processes which is used as a way to ensure that everyone in the organization conduct their duties to the best of their abilities and for improving the competence of the employees (34). A study by Panuonen in Finland showed that 12 months after implementation of clinical monitoring program, major changes occurred in meeting the patients' needs, nursing activates and registration of nursing activities and more than 50% of the participating nurses showed improvement in implementation of nursing standards (35). In another study by Salehi et.al which investigated the viewpoints of 165 faculty members of Shahid Beheshti University of Medical Science, Isfahan University of Medical Science and Hamadan University of Medical Science about administrative and clinical monitoring, monitoring the performance of faculty members was considered to be the least suitable supervision method. Among the components of administrative supervisions currently in place in universities, faculty members only considered self-reports and teaching method workshops to be completely or somewhat useful in improving teaching – learning process which annual evaluation of the educators by department of education and unannounced monitoring sessions were considered useless or somewhat useless (36) which is similar

to the results obtained in this study.

The results of this study showed no significant relation between personal characteristics of faculty members (gender, education, academic rank and specialized field) and the average scores of various faculty development strategies and only age of the faculty members significantly affected the average score for workshops, fellowships and short-term training programs. Also Sabaghian's study showed that there is a significant difference between age, field of study (medical and non-medical), academic degree, and academic rank and number of repeated participations in the workshops in two universities and showed that those in the age group of 54-59 consider these workshops to be more effective compared to other age groups. Also faculty members with Masters' degree and educator rank considered these workshops to be more effective compared to those with higher education and academic ranks (37). The fact that workshops can create motivation for performance of one's duties, increase work skills and facilitate earning points and organizational promotion for the faculty members can be the reason behind the fact that these workshops are better received by those with lower ranks and educations.

In Mousavi's study which was conducted in Shiraz in 2001, the attitude of participants in faculty development of various genders, educations and from various fields was investigated. The results showed that there is a meaningful difference between the average scores of male and female participants in Principles of Educational Planning workshop with female participants having higher average scores while other scores showed no significant difference (16). The reason behind the different results compared to the results of this study might be the fact that only certain workshops were investigated in a long time period.

Finally it is worth mentioning that conducting boarder studies with larger sample sizes can help to improve the

current results. One of the strengths of this study is the qualitative part which consists of determination of suitable strategies by medical education experts and creation of research tool which given the numerous possible strategies for faculty development helped create new ideas and identify effective strategies for presentation to faculty members.

The results of this study showed that according to faculty members, workshops, fellowships, short-term training courses and determination of the best performance are the best strategies for faculty development. On the other hand, young faculty members with less than 5 years of work experience were less supportive of workshops, determination of best performance, peer learning and evaluation of performance by students compared to other faculty members. These results can be used for planning and policy making regarding faculty development. Also educational managers and authorities can improve the quality of faculty development programs and consequently the quality of education system by participating faculty members in planning, implementation and evaluation of faculty development programs.

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